

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN WHITMAN and JOHN DAVLIN

Appeal No. 2006-2210
Application No. 09/944,230

ON BRIEF

MAILED

SEP 18 2006

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Before THOMAS, HAIRSTON, and MACDONALD, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 1, 3, 4, 11 through 13 and 15 through 24. The examiner has objected to claim 14 and claims 2 and 5 through 10 have been withdrawn from consideration.

Representative claim 1 is reproduced below:

1. a semiconductor device structure, comprising:
a substrate including at least one recess formed therein; and
a material layer disposed over the substrate and substantially filling the at least one recess, the material layer having a surface substantially free of hills and valleys.

The following references are relied on by the examiner:

Dennison et al. (Dennison)	5,663,090	Sep. 2, 1997
Kikuchi et al. (Kikuchi)	6,278,153	Aug. 21, 2001 (Filed Oct. 19, 1999)
Yates et al. (Yates)	6,358,793	Mar. 19, 2002 (Filed Feb. 26, 1999)
Wang	6,461,932	Oct. 8, 2002 (Filed Dec. 14, 1998)

Claims 15 through 20, 23 and 24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Yates. Similarly, claims 1, 3, 11 through 13, 21 and 22 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kikuchi. Correspondingly, claims 1, 15, 16 and 21 through 24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Wang. Kikuchi and Dennison are utilized by the examiner within 35 U.S.C. § 103 to reject claim 4.

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief and reply brief for appellants' positions, and to the answer for the examiner's positions.

OPINION

For the reasons set forth by the examiner in the answer, as amplified here, we sustain each of the rejections of the claims on appeal.

Independent claim 1 on appeal in part requires that a material layer substantially fill at least one recess in a substrate. On the other hand, independent claim 15 correspondingly recites a similar feature such that the claimed material layer at least partially fills at least one recess of a substrate. These features are not argued in the brief and reply brief. What is common among both independent claims 1 and 15 on appeal that is argued is the feature "the material layer having a surface substantially free of hills and valleys."

Page 2 of the answer correctly challenges appellants' submission of the Summary of the Invention in the brief as not complying with 37 C.F.R. 41.37(c)(1)(v). In response, appellants' Summary of the Invention at page 2

of the reply brief makes reference to specification paragraphs [0015], [0046], [0053] and [0055]. These relate to figures 7, 8 and 12 through 14. Appellants' originally filed claims, including the original versions of independent claims 1 and 15 on appeal, as well as the disclosed invention with respect to these features and figures states that the surface of a material layer is substantially planar. These paragraphs make reference to the showing in disclosed figure 2 which is discussed in paragraphs 39 through 41 and also describe such a surface as substantially planar.

In contrast, the present claims on appeal, rather than reciting that the surface is substantially planar in a manner coextensive to the manner in which it was originally claimed and is presently disclosed, recites a negative limitation indicating that the surface is "substantially free" of hills and valleys. To be consistent within the written description portion of 35 U.S.C. § 112, first paragraph, the manner in which the presently claimed invention is recited is compared with the manner in which the features were originally recited and claimed as well as originally disclosed and therefore must be considered to be coextensive or substantially identical.

Pages 6 and 7 of the answer focus initially in the examiner's Responsive Arguments upon the use of the term "substantially" as describing the claimed surface. The discussion there from prior case law emphasizes that the term indicates an approximation rather than a perfect recitation of a feature since such a term is a term of degree. It is further explained that such a descriptive term as "substantially" avoids strict numerical boundaries to a specified parameter. Thus, we essentially agree with the examiner's remarks in the initial lines of page 7 of the answer that the use of the word substantially is a broadening recitation in effect.

We do not agree with appellants' views expressed in the brief and reply brief as well as the continued reliance upon MPEP § 2125 as supporting patentability of the present claims. The drawings of the respective references to Yates, Kikuchi and Wang show relative or comparative dimensions/surfaces among the plurality of dimensions/surfaces illustrated. An artisan's view of the depictions in the drawings of the respective references relied upon by the examiner would clearly and plainly indicate that the references meet, within 35 U.S.C. § 102, the broadly defined limitation of substantially free of hills and valleys.

Appellants' artful approach to claim the surface as "substantially free of hills and valleys" is at least the same as or broader than the originally disclosed approach of showing and describing the same surface as substantially planar. We recognize that the various references do not actually teach with words in the specification of the respective references a negative limitation using the exact words in the manner in which appellants' claim them. On the other hand, the artisan is not going to be deceived that the disclosed and shown features in each of the respective patents of substantially planar surfaces is not coextensive with substantially free of hills and valleys. Even if we were to agree with appellants' views expressed at the bottom of page 7 of the principal brief on appeal that the artisan would not have expected the surface of prior photoresist layers to have a variety of minuscule nonplanar features, the claims also actually recite a modifier, that is, the word "substantially," thus accommodating some minuscule nonplanar features including hills and valleys in the manner claimed. To the extent it appears to be argued, the claims therefore do not recite positively that the surface is planar or that it is positively or completely free of hills and valleys. The arguments actually made before us are not consistent with the

actual scope of the claims. The arguments in effect are more specific than the scope of the claimed features argued.

Stated otherwise, appellants' negative limitation of a surface being "substantially free of hills and valleys" is the logical converse of the surface being substantially planar. The references do not teach a negative, that is, what is not taught/shown but only what is positively taught or shown, that the surfaces are substantially planar. This claimed negative limitation must be interpreted to be consistent with appellants' original claims and disclosed invention, that the surface is substantially planar, which is the same manner in which the disclosed invention is taught and depicted in the prior art relied upon by the examiner.

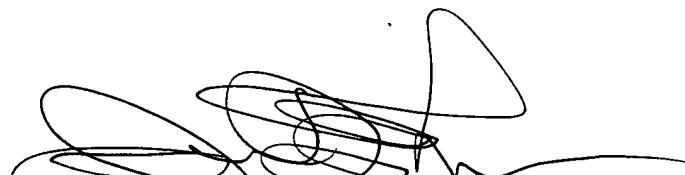
To the extent the features of dependent claims 13, 20, 22 and 24 are argued by appellants with respect to any one or more of the rejections under 35 U.S.C. § 102, the examiner's statement of the rejection has addressed the claimed features which have not been rebutted by appellants in the brief and reply brief. Appellants' positions with respect to these dependent claims extend the arguments made with respect to their parent independent claims 1 and 15 and make no reference to the correlated teachings and showings relied upon by the examiner.

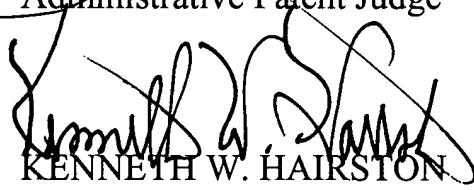
Lastly, the separate rejection of dependent claim 4 within 35 U.S.C. § 103 is also sustained. Appellants' brief remarks at the bottom of page 15 of the principal brief on appeal does not argue that Dennison is not properly combinable within 35 U.S.C. § 103 with Kikuchi and does not dispute the features argued by the examiner as taught in Dennison. Moreover, appellants' specification page 12 in paragraph [0040] relies upon the teachings in Dennison as the starting point of appellants' own disclosed invention.

In view of the foregoing, the decision of the examiner rejecting various claims on appeal under 35 U.S.C. §§ 102 and 103 is sustained. Therefore, the decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED


JAMES D. THOMAS)
Administrative Patent Judge)


KENNETH W. HAIRSTON)
Administrative Patent Judge)
BOARD OF PATENT
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ALLEN R. MACDONALD)
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